APPLICATION

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TITLE: MESSAGE EXCHANGE SERVER ALLOWING
                    ENHANCED MESSAGE CHARGE ALLOCATION,
                    AND METHOD

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MESSAGE EXCHANGE SERVER ALLOWING ENHANCED MESSAGE CHARGE ALLOCATION, AND METHOD

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001]   This application claims benefits from U.S. provisional patent application no. 60/247,357 filed Nov. 13, 2000, the contents of which are hereby incorporated by reference.

FIELD OF THE INVENTION

[0002]   The present invention relates to personal introduction and message exchange services, such as dating services, and more particularly to methods and devices for allocating charges for using such services.

BACKGROUND OF THE INVENTION

[0003]   Over the past several years, personal message exchange services, such as computer and telephone based dating and introduction services have become increasingly popular. These services offer users a convenient and time-efficient way to contact, and eventually meet others for romantic or social purposes.

[0004]   Typically, users of such services can access a main server operated by a service provider, usually by using a telephone or a computer terminal.   By way of such access, each user can browse a pool of personal greetings and personal information left by others; create his or her own personal greeting and personal information profile; check his or her personal mailbox for messages sent by others; and send personal messages to the mailboxes of others.

[0005]   Alternatively, or additionally, users may join conferences between two or more other users. The conferences may be by way of conference calls, or by

way of computer network chat groups or rooms. As such, such conferences are often colloquially referred to as "chat rooms". Advantageously, chat-rooms enable users to communicate with others on an anonymous basis. Furthermore, chat rooms make the initial contact between users less socially awkward and intimidating than if the users were to employ more conventional means, such as making direct telephone calls or even leaving messages.

[0006]   Often access to a particular service is provided by telephone. A user accessing a server hosting the service is usually directed through a series of voice menus to the pool of stored personal greetings. The user need not browse all the greetings in the pool but may browse only those greetings left by users that match the user's personal preferences. For example, a male user wishing to meet females of a particular age range and who live in a certain geographic locale, may be able to browse only those personal greetings left by females meeting these criteria. Typically, the user will listen to the personal greetings and may originate a message to the mailbox of recipients that the caller might be interested in meeting. At some later time, a recipient may access an associated personal mailbox, check received messages, and decide whether to respond to those messages. Where the recipient responds to a message by sending another message to the message originator, the two may start an exchange that may ultimately lead to a face-to-face meeting, and possibly to a relationship.

[0007]   Personal introduction and message exchange services typically generate revenues for service providers in one of two ways: by charging periodic subscription fees, or by charging users for actual use of the service.

[0008]   Disadvantageously for users, periodic subscription fees must typically be paid regardless of the effectiveness of the service. Thus, subscribers may join a service only to later discover that not enough users meeting the subscriber's preferences use the same service. Consequently, this subscriber may have difficulties meeting others despite having paid for the service. Accordingly, users may be reluctant to pay on-going subscription fees for a personal exchange

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service.

[0009] By charging users for actual use of the service, charges may only be levied once a user believes the service to provide value. For example, a user may be charged only while contacting others. Thus, users could be allowed access to the pool of personal greetings and users' information free of charge. Similarly, they may place personal greetings free of charge. Use-based charges may be pre-paid or billed once incurred.

[0010] These use-based charges may be perceived as somewhat fairer by users than subscription fees, as users may determine, without any costs, if others of interest use the service. Conveniently, when users suspend their use of the service, they incur no further charges. Moreover, advantageously, users are encouraged to place personal greetings without incurring charges.

[0011] For telephone based services, use based charges may easily be levied by tracking the time spent recording messages for others or listening to messages in a mailbox.

[0012] Disadvantageously, by charging for actual message exchange services, users may be charged for both sending messages and for checking received messages. In some cases, users may consider this to be unfair, and may therefore be reluctant to send messages or check received messages. For example, a popular recipient who is ordinarily charged for listening to received messages might consider it unfair to have to pay to listen to messages sent by others interested in contacting that recipient. Additionally, the recipient may wish to respond to some messages without assuming the associated cost. Under these circumstances, the recipient may think that it would be more appropriate for the message originators to bear both the costs of the messages sent by those message originators, and the costs of the response. Similarly, in view of the associated costs, a user may be reluctant to send messages to a large number of recipients, without knowing how many of these may be interested in further contact.

[0013]   Similarly, conference/chat room users not familiar with a particular conference can only determine the conference's effectiveness for meeting others and learn of the service's benefits by trying out the service for themselves. This necessarily means that those new users would have to incur a certain level of expense before finding out if a particular chat room service meets their needs. There may therefore be reluctance on the part of new users to join a conference service they know very little about, and for which they will be immediately charged as soon as they start using the service.

[0014]   The service provider, on the other hand, is similarly reluctant to allow users to use the service free of charge without receiving some benefit.

[0015]   It would, therefore, be desirable to give users greater flexibility and options in incurring charges for sending and receiving messages.

SUMMARY OF THE INVENTION:

[0016]   It is therefore an object of the present invention to provide message originators using a personal message service with the option of transferring costs associated with originating messages to recipients. It is a further object of this invention to inform recipients that a received message has not been paid for, and to further allow the recipients to accept the charge and check the message, or refuse the charge, thereby declining to check the message.

[0017]   In accordance with an aspect of the present invention, a charge associated with sending a message from a message originator to a recipient at a message exchange server is allocated based on an indicator received from the message originator indicating whether the charge is to be borne by the originator or by the recipient. If the charge is to be borne by the recipient, the recipient may later agree to assume the charge and hear the message, or decline the charge without hearing the message.

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[0018]   In accordance with another aspect of the present invention, a device that allows a plurality of users to communicate with each other is operated so that paying users may communicate with all of the plurality of users using the device and non-paying users are restricted from communicating with other non-paying users. For example, in accordance with aspects of the invention, non-paying users may be restricted from hearing personal greetings of other non-paying users; non-paying users may be restricted from sending messages to non-paying users; or non-paying users may be preventing from bridging telephone calls with other non-paying users. Paying users, on the other hand, may hear all personal greetings; send messages to all users; bridge calls with all users.

[0019]   The invention may be embodied in a suitably adapted message exchange device or software stored on a computer readable medium.

[0020]   Other aspects and features of the present invention will become apparent to those of ordinary skill in the art, upon review of the following description of specific embodiments of the invention in conjunction with the accompanying figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021]   In figures which illustrate, by way of example, embodiments of the present invention,

[0022]   FIG. 1 is a simplified block diagram telephone sets in communication with a message exchange and conference server, exemplary of an embodiment of the present invention;

[0023]   FIG. 2A illustrates an example greeting record forming part of the greeting database hosted by the message exchange server of FIG. 1;

[0024]   FIG. 2B illustrates an example directory structure at the message exchange server of FIG. 1;

[0025]   FIG. 2C illustrates the format of a control information file used in association with messages stored in the directory structure of FIG. 2B;

[0026]   FIG. 2D illustrates an example administrative record forming part of the accounts database hosted by the message exchange server of FIG. 1;

[0027]   FIG. 3 is a simplified block diagram of a portion of the message exchange server of FIG. 1;

[0028]   FIG. 4 is a flow chart illustrating steps performed by the server of FIG. 1, presenting a user with a main menu;

[0029]   FIG. 5 is a flow chart illustrating steps performed at the server of FIG. 1, allowing users to browse stored greetings;

[0030]   FIG. 6 is a flow chart illustrating exemplary steps performed by the server of FIG. 1 in response to a message originator sending a message;

[0031]   FIG. 7 is a flow chart illustrating exemplary steps performed by the server of FIG. 1 in response to a message recipient receiving messages; and

[0032]   FIG. 8-13 are flow charts illustrating exemplary steps performed by the server of FIG. 1 to allow users to access a chat room service hosted by the server of FIG. 1, in manners exemplary of the present invention.

DETAILED DESCRIPTION

[0033]   FIG.1 illustrates an apparatus facilitating the exchange of messages in the form of a personal message exchange server 10, exemplary of an embodiment of the present invention. Server 10 includes an Interactive Voice Response ("IVR") unit 60, in communication with a database server 50.

[0034]   Database server **50** and IVR unit **60** may be interconnected by way of a conventional computer network, which is preferably a local area network ("LAN").

[0035]   IVR unit **60** may further include a telephone network interface interconnecting server **10** with a telephone communications network, that is preferably the public switched telephone network (PSTN) **70**. As will become apparent, IVR unit **60** allows users to access server **10** by way of PSTN **70**. Conveniently, a plurality of users may simultaneously communicate with IVR **60**, and with each other, by way of PSTN **70** as detailed below. Example user telephones **80** and **84**, interconnected with PSTN **70** are further illustrated. Users of server **10** can communicate instructions and enter information by pressing touchpad **82** on telephone **80**, or touchpad **86** on telephone **84**. For the sake of clarity, only two telephones are illustrated. Of course, server **10** may in theory be accessed by any other telephone in communication with PSTN **70**.

[0036]   Database server **50** is preferably a conventional network aware computing device. Database server **50** therefore includes a conventional processor in communication with computer memory and a network interface. As such, server **50** stores and executes a conventional network aware operating system such as a Microsoft Windows NT operating system, a Unix operating system, or the like. As well, database server **50** includes a conventional file system, preferably controlled and administered by the operating system governing overall operation of server **50**. This file system preferably hosts a greeting database **52** and an accounts database **56**. As will become apparent, server **50** provides information contained in these databases to requesting computing devices. If needed, other databases may of course be hosted by server **50**. Software programs to process requests made by interconnected computing devices may be stored in persistent storage memory, such as a hard-disk drive, for execution by server **50**. Similarly, software adapting server **50** to perform in manners exemplary of the present invention, including the operating system, is preferably also stored within persistent storage memory at server **50**.

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These and other software applications can be loaded into persistent storage memory of **50** from computer readable media **58** such as a CD-ROM, diskette, tape, or the like.

[0037] The file system of server **50** further includes a directory structure **54** formed within the hosted file system. The directory structure **54** may for example be a logical drive in the file system recognised by the operating system controlling server **50**. As such, directory structure **54** includes a collection of logically associated directories and files.

[0038] Example record and file/directory structures of databases **52** and **56**, and directory structure **54** are more particularly illustrated in **FIGS. 2A, 2B, 2C,** and **2D. FIG. 2A** illustrates an example greeting record forming part of the greeting database **52** hosted by message exchange server **10** of FIG. **1**; FIG. **2B** illustrates an example embodiment of a directory structure **54**, hosted by message exchange server **10** where users' messages are stored; **FIG. 2C** illustrates the format of a control information file used in association with messages stored in the directory structure **54** of **FIG. 2B**; and **FIG. 2D** illustrates an example administrative record forming part of the accounts database hosted by message exchange server **10**.

[0039] Greeting database **52** preferably includes a plurality of greeting records each corresponding to a known user of message exchange server **10**. An example greeting record **200** is illustrated in **FIG. 2A**. Server **50** preferably enables users to browse the greeting database in order to learn more about other users and to determine which of those other users meet their preferences. Each record includes several fields relevant to a particular user. Specifically, record **200** preferably includes a user ID field **202** that contains a unique identification number that allows server **50** to easily index and access record **200**. Record **200** preferably also contains password field **204** containing a password that is preferably known only to the user associated with record **200**. Optionally, a name field **206** contains a name or nickname of the user. Additionally, record **200**

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includes several fields containing personal attributes of an associated user including gender field **208** detailing the user's gender; date of birth field **210** detailing the user's date of birth; height field **212**, and weight field **214**, detailing the user's height and weight, respectively; education field **216** providing information about the user's educational background; ambition field **218** listing the user's ambitions; job field **220** describing the user's occupation; and preferences field **222** containing information about the characteristics of others that the particular user is seeking to meet. Data within these fields may be stored in ASCII, as bitmaps or in other suitable formats. Record **200** further includes personal greeting field **224** and temporary greeting field **226** which contain personal greetings stored in a computer readable format prepared by the user associated with record **200** for use by IVR unit **60**. Personal greeting field **224** may be either a pre-recorded greeting in a suitable sound data format such as those formats dictated by G.**711**, G.**726** or the like. Temporary greeting field **226** similarly stores a pre-recorded greeting in a suitable sound data format, for use in establishing live conferences, or "chat" sessions between users, as detailed below. Additionally, a "chat" payment status field **228** is included in record **200**. Field **228** preferably contains an indicator of a user's desire to pay for using chat room services offered at server **10**. Field **229** further stores an indicator, indicative of whether or not a user is currently taking part in a chat. Field **227** stores an indicator, indicative of whether or not a user is currently taking part in a one-on-one conversation with another user, bridged at server **10**.

[0040] Directory structure **54** preferably stores personal messages received for users, sent by others, and thereby acts as a user's mailbox. An example embodiment of directory structure **54** is shown in **FIG. 2B**. As illustrated, directory structure **54** is divided into user directories with each directory storing files associated with messages received by a particular user. User directories in directory structure **54** are preferably identified by the unique UserID stored in field **202**. Thus, the illustrated directory corresponds to a user associated with a UserID1 (also stored in fields **202** of record **200** of that user). Other illustrated directories are associated with UserID2 and UserID3. Each directory preferably

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indexes several files associated with an identified user. Specifically, each directory **230** contains an index file **232** containing information that server **50** uses to perform mailbox management and maintenance. Index file **232** preferably includes password of the user associated with directory **230** to ensure that only the user who enters the password stored in file **232** is granted access to files within directory **230**. For security purposes, the password stored in file **232** may be encrypted in ways familiar to those of ordinary skill. File **232** may also include the name of the user associated with directory **230**, and the number of new unchecked messages that have been received at directory **230** since the last time the user checked for new messages. It will be appreciated that additional information may also be stored in file **232**.

[0041]   Every message stored within directory **230** preferably includes two associated files. A first file **234** storing control information associated with a message and a second file **236** storing data representative of the actual received message. The format of example control information stored in file **234** is illustrated in **FIG. 2C**. As illustrated the control information preferably includes a unique message identifier in field **262**; the userID of the message originator in field **266**; the time and date of receipt of the message in field **272**; a flag indicating whether the message has been checked (i.e. listened to, or the like) by the recipient in field **274**; and a flag indicating whether the message has been paid for or not in field **276**. As will become apparent, the flag contained in field **276** is used by server **50** to determine if a received message has already been paid for by the message originator, or whether the cost of the message is to be borne by the message recipient. The message file **236** may contain a voice message encoded using a suitable CODEC.

[0042]   Accounts database **56** (**FIG. 1**) preferably stores administrative data for known users. Database **56** preferably contains a plurality of administrative records each associated with a known user of message exchange server **10**. An example administrative record **280** is illustrated in **FIG. 2D**. As illustrated, each record **280** includes several fields that contain administrative information about a

particular user. Specifically, record **280** preferably includes a UserID field **282** containing the same unique identifier stored in field **202** of record **200** (**FIG. 2A**), and identifying a directory in structure **54**, allowing server **50** to easily access and index record **280**.

[0043] Charges accrued by the user for using message exchange server **10** may be accounted for in balance field **290**. Balance field **290** preferably stores an indicator of a pre-paid amount, less any accrued charges charged to the user. Accrued charges may be subtracted from balance field **290**, as these are accrued.

[0044] Those versed in the art will appreciate that many other possible fields may be included in records **200** and **280**. Further, it will be appreciated that the fields included in records **200** and **280** may be structured in many ways, and that the records in databases **52** and **56** can themselves be organized in many different ways. Databases **52** and **56** are preferably stored on an alterable storage medium, such as a hard-drive, which may form part of server **50**. Database **52** and **56** are managed and maintained by server **50** which may further store and execute database management software applications such as FOX Pro, Dbase, or other suitable software designed to manage and maintain the information stored within databases **52** and **56**. Directory structure **54** could easily be replaced with a suitably formed database. Messages for users could be suitably stored and indexed in the database for later retrieval. Records **234** (**FIG. 2B**) for all users could be combined and stored within a separate database, allowing for the quick indexing and manipulating of message files **236**.

[0045] **FIG. 3** illustrates an exemplary embodiment of IVR unit **60**. IVR unit **60** is preferably a conventional computing device which stores and executes suitable software to act as an interactive voice response processor. As such, unit **60** includes CPU **130** such as an Intel Pentium™ class CPU, and memory **140** including Random Access Memory (RAM) and persistent storage memory. Memory **140** stores computer programs executed by CPU **130**, including the

voice response program used to prompt users for requisite information, and for storing voice response segments in a computer readable sound format formed by a suitable CODEC. These voice response segments are used to provide verbal information to users accessing message exchange server **10** through a telephone, and to prompt those users to make selections and enter data. These voice response segments can be converted into speech signals compatible with PSTN **70**. Again, software and voice response segments stored within memory **140** may be loaded into memory **140** from computer readable medium (not illustrated) which may be CD-ROM, diskette, tape, hard-drive, or the like.

[0046]   IVR unit **60** preferably also includes a voice response unit (VRU) **110** such as Dialogic D4100ESC or D240SC-T1 IVR card, to provide the physical connection between unit **60** and PSTN **70**. Preferably IVR unit **60** includes several such VRUs (only one is illustrated). In the example embodiment, each VRU **110** may provide up to **300** users simultaneous access to IVR unit **60**.

[0047]   VRU **110** preferably also includes a Dual Tone Modulated Frequency (DTMF) logger. This logger decodes DTMF tones corresponding to number keys on a telephone touchpad such as touchpad **82** or **86**. Once a communication link between unit **60** and telephone **80** or **84** has been established, VRU **110** receives DTMF signals corresponding to a user's instructions and information. VRU **110** converts these DTMF signals into computer readable format, and preferably forwards these to CPU **130,** or to some other module, for further processing.

[0048]   VRU **110** preferably also includes an analog to digital (A/D) and digital to analog (D/A) converters. The A/D converter may convert speech segments articulated by a user, like a personal greeting, or a voice message, into a digital speech signal that can thereafter be converted into a computer readable sound format using a suitable CODEC. Converted speech segments can then be stored in either database **52** or as a file in directory structure **54**. Similarly, the D/A converter may convert voice or speech data received from either memory **140**, or from databases **52** and files within directory structure **54**, into speech

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signals. These speech signals may then transmitted from VRU **110** to a recipient in communication with PSTN **70**.

[0049] Those versed in the art will appreciate that VRU **110** may include storage space in the form of PROM chips, CD-ROM, hard-drive, or some other suitable medium, to hold a repository of common voice response segments in a suitable computer readable sound data format that can readily be converted into speech signals. These voice response segments may then be synthesized into speech signals and transmitted onto PSTN **70**. For example, when an incoming call arrives, VRU **110** may retrieve from its resident storage a voice response segment that corresponds to a standard greeting that is played to all users. That segment may be converted into a speech signal, and transmitted to a user at telephones **80** or **84** through PSTN **70**.

[0050] In operation, a user wishing to use server **10** (**FIG. 1**) preferably first registers. An example user may access message exchange server **10** using telephone **80** or **84** by dialing a telephone access number associated with message exchange server **10**. The user may thus establish a communications link with unit **60** by way of PSTN **70**. In order to register, a user typically enters a previously assigned identifier by way of his or her touchpad. In the event the user has not previously registered and has not yet obtained an identifier/password unit **60** may initiate a registration sequence. Preferably this registration sequence will prompt the user to enter personal information by sending proper voice response segments stored in memory **140** to telephone **80** or **84** prompting the user to enter his/her name and address, age, as detailed above. A user may enter requested information by pressing the appropriate keys on touchpad **82** or **86**. The information keyed in by the caller is sent to unit **60** in the form of DTMF signals. VRU **110** (**FIG. 3**) converts the DTMF signals corresponding to the user's selections into computer data that can be processed by CPU **130** and provided to server **50**. The information received from the user is then forwarded to server **50** allowing server **50** to create user records **200** and **260** and directory **230** for the user. At this point the user may be assigned or

choose a password or personal identification number that may be used to access the created account. Alternatively, server **60** may transfer the user to a call center (not illustrated). There, an operator may personally query the user to obtain details that may be provided to server **60** to populate fields of record **200**. Optionally personal information need not be solicited or provided to server **10**, allowing users anonymous use of server **10**. Once registered, the user may also record a personal greeting. Greetings may be screened by an operator of server **10** before being recorded to ensure they do not contain offensive content. The recorded greeting is stored in field **224** in the user record **200**.

[0051]   As should now be apparent, each user may store a personal greeting. The collection of personal greetings of the various users forming a pool of personal greetings within database **52**. This pool may be browsed by a user so that the user may locate greetings of interest. Once a suitable greeting is located, a browsing user may send a message to a user associated with the located greeting.

[0052]   So, after a user has logged on to server **10** for the first or subsequent time and has recorded a personal greeting, the user is next given a series of options. Specifically, the user is given the option of exiting; browsing personal greetings of others stored in database **52**; retrieving messages left for the user by others; or joining an in-session conference or chat, as more particularly illustrated in **FIG. 4**. Decisions may be communicated by way of DTMF tones received in step **S402**. Specifically, in step **S402** the user is prompted to exit; browse; retrieve waiting messages; or join a conference/chat. If a user wishes to exit, as determined in step **S402**, he/she is allowed exit. In the event a user wishes to browse greetings of others, steps **S500** (**FIG. 5**) and onward are performed. In the event a user wishes to join a chat, as determined in step **S402**, steps **S800** and onward (**FIGS. 8-13**), detailed below are performed. In the event the user wishes to retrieve messages sent by others, steps **S700** (**FIG. 7**) are performed.

[0053]   If the user wishes to browse stored greetings of others as determined

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in step **S402**, a user may browse greeting database **52** by pressing appropriate keys on touchpad **82** or **86** to indicate to server **10** to browse the personal greetings. The user may, in response to prompting from unit **60**, make touchpad selections to further narrow the search of database **52** that is to be performed by server **50** in step **S502**, as illustrated in **FIG. 5**. For example, the user may press a key corresponding to the user gender preference, press another key corresponding to the user's age-range preferences, and so on. In response to the user's request to browse the greetings, unit **60** sends a request to server **50** to access greeting database **52** and retrieve the personal greetings corresponding to the user's request in step **S504**. The retrieved greetings are provided to unit **60** and VRU **110** that converts the personal greetings into speech signals that are provided to PSTN **70**. Users at telephones **80** and **84** can then listen to the retrieved greetings. Greetings may be sequentially presented in step **S506**, as controlled by appropriate DTMF inputs provided in step **S508**. A user is, of course also given the option to exit between greetings in step **S508**.

[0054]   Once a user has reviewed personal greetings of others, the user – acting as a message originator – using example telephone **80**, may wish to send a message to another user as determined in step **S508**. Steps performed at message exchange server **10** to allow a user to send a personal message, exemplary of an embodiment of the present invention are more particularly illustrated in **FIG. 6**.

[0055]   As illustrated, once a recipient is identified as a result of browsing, and the originator has indicated that he or she wishes to send a message to that recipient, server **10** prompts the originator to indicate who is to pay for the message and receives a corresponding indicator in step **S602**. Specifically, VRU **110** preferably transmits to the originator at telephone **80** a prompt requesting the originator to indicate whether it is the originator or the recipient who is to pay for the message. The originator may respond by selecting who is to pay for the message by pressing an appropriate key on touchpad **82**, or in any other suitable manner. For example, the originator could either press the '1' key to indicate that

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the originator is to be charged for the message, or press the '2' key to indicate that the recipient is to be charged for the message. Unit **60** receives the originator's selected indicator, whereupon VRU **110** converts the DTMF signal corresponding to the originator's selection into readable computer data. The converted DTMF signal is then forwarded to server **50**.

[0056]   Based on the received indicator, server **10** allocates charges associated with the message to the originator or recipient. Specifically, if charges are allocated to the originator (i.e. the originator is to pay for the message), as determined in step **S604**, server **10** preferably determines if the originator has enough money or credit left in a pre-paid account in step **S606**. Specifically, server **50** checks if the balance stored in field **290** of record **280** (**FIG. 2D**) associated with the originator is larger than zero (**0**). If not server **10** may optionally initiates a fund request sequence in step **S608**. During this fund request sequence, the originator may be prompted for payment information by VRU **110** of server **10**. Payment information could take the form of credit card information that could be entered by the originator by way of touchpad **84** and stored and processed by server **10**. Server **10**, in turn, may verify the payment information and increment the contents of field **290**, replenishing the account balance with an amount that has been agreed upon in advance by the originator. Alternatively, the originator could be redirected to a human operator of server **10**. The human operator may in turn query the originator for payment information and then manually update the originator's account balance stored in field **290**. Conveniently, as the balance stored in field **290** is only checked at this time, a user may send messages that are not pre-paid without having money in his or her account.

[0057]   Once there is enough credit in the originator's account, server **50** adds an identifier to the control information associated with an about to be generated message, stored in field **276** of file **234** (**FIG. 2C** - corresponding to file **236** where the message the originator is to compose will be stored) in step **S610**. This identifier indicates that the message has been paid for. In addition, in step

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S612 server **50** calculates the cost of the message and updates field **290** of the record **280** associated with the originator in accounts database **56**, by subtracting the calculated cost from the balance stored in field **290** of the originator's record **280**. The cost may be calculated in any number of ways. It may, for example, be based on the duration of the message. Alternatively, a flat fee may be associated with each message.

[0058] If the originator does not wish to pay for the message, charges are allocated to the recipient. An indicator of the originator's choice is also determined in step **S602**, server **50** adds an identifier to the control information associated with an about to be generated message, stored in field **276** of file **234** (**FIG. 2C** - corresponding to file **236** where the message the originator is to compose will be stored) in step **S614** signifying the message has not yet been paid for. Thereafter steps **S616** and onward are performed.

[0059] After step **S612** or **S614**, the originator is prompted to input an actual message in step **S616**. As well, the message originator may be prompted to input message control information that could include an indicator of urgency, or destination for the message. The message and control information may be received at message exchange server **10** in step **S618**.

[0060] Specifically, the originator speaks the to-be recorded message at telephone **80**. The originator may identify the message recipient by replying to a greeting or by entering an identification number associated with the recipient. The user may enter the identifying information by pressing suitable keys on touchpad **82**. Other control information, such as the urgency of the message, may also be entered by the originator through touchpad **82** when prompted by unit **60**. Of course, the control information is received in the form of DTMF signals. The DTMF signals corresponding to the originator's selections are then converted into computer readable signals by VRU **110**. Once the originator has sent all the control information, the originator preferably starts recording the actual personal message that is to be sent. Since the message the originator is

recording arrives at unit **60** as an analog signal, the A/D converter of VRU **110** may convert the analog signal into a digital signal which can then be converted into a computer readable sound format. The processed message and the control information are then all forwarded to server **50**.

[0061] Subsequently, in step **S620** server **50** stores the data associated with the sent message in directory structure **54** in a directory **230** associated with the identified recipient. Server **50** preferably stores this data in a suitable sound data format. In addition, server **50** preferably stores the message control information, including the indication whether the originator has paid for the message or whether the recipient is to pay for the message, in an associated file **234**.

[0062] **FIG. 7** illustrates exemplary steps performed by message exchange server **10** to allow a recipient, by way of an example telephone **84**, to retrieve (i.e. listen or the like) messages sent by others, in response to choosing to do so in step **S402** (**FIG. 4**). Specifically, in step **S702**, server **50** receives a user's request to check unchecked messages. If a password is required in order to authenticate the identity of the person accessing stored messages, server **50** may at this point check a received password against the recipient's unique password stored in index file **232**. Next, in step **S704**, server **50** checks whether the recipient has any unchecked messages stored at server **50**. This may be done for example, by accessing the message checked field **274** of the control information files stored in directory structure **54** in a directory **230** associated with the recipient in directory structure **54**, and determining which of the messages have not been checked. If there are no such messages, steps **S700** are completed and the user is returned to step **S402** and may perform some other operation.

[0063] If there is at least one unchecked message in directory **230** associated with the recipient then, in step **S706** server **50** accesses the first unchecked message in directory **230** by locating a message file **236** corresponding to this message. In step **S708** server **50** preferably determines whether the message

has been paid for by checking an indicator in an associated control information file **234** corresponding to the first unchecked message that indicates whether the originator who sent the message has accepted the charge for the message. If the originator has paid for the message, then in step **S718** server **50** preferably retrieves and processes the message, and sends it to the recipient. The message processing includes the conversion of the voice data into speech signals using VRU **110**. The message is then sent to the recipient at telephone **84** by way of PSTN **70**. In step **S720**, the originator may optionally be notified that the message has been checked. Moreover, in step **S722**, the recipient is given the opportunity to send a reply. If the recipient wishes to reply, steps **S602** and onward are performed.

[0064] If, on the other hand, the message has not been paid for as determined in step **S708**, message exchange server **10** notifies the recipient in step **S710** that the message has not been paid for, and requests the recipient to provide input specifying whether the recipient wishes to accept the charge for the message. Optionally, message exchange server **10** may reveal the identity of the message originator, possibly by sending some of the originator's personal details contained in the record **200** associated with the originator.

[0065] Message exchange server **10** receives the recipient's input in step **S712**. If the recipient has agreed to accept the charge for the message, as determined in step **S714**, server **10** next determines in step **S730** if the recipient has enough money or credit left in the recipient's pre-paid account. Specifically, server **50** checks if the balance stored in field **290** of record **280** associated with the recipient is larger than zero (**0**). If there is not enough credit or funds in the recipient's balance, server **10** optionally initiates a fund request sequence in step **S732**. This sequence may be similar to that described with reference to step **S608** (**FIG. 6**) and obtains pre-payment of an agreed-upon amount from a user. This amount may be accounted for in field **290** of an associated record **280** for the user.

[0066]   Conveniently, as should now be appreciated, server **10** does not require that a user provide any pre-payment until that user wishes to send a pre-paid message, or receive a message that must be paid-for. Conveniently, paid-up amounts for any user as accounted for in field **290** of an associated record **280**, may be used to send pre-paid message or receive unpaid messages. Alternatively, server **10** could be modified so that each user would be billed after use. As such, a total of accrued charges could be maintained, and billed periodically.

[0067]   Subsequently, in step **S734**, charges associated with the to-be received message may be calculated, and deducted from field **290** of the record **280** associated with the recipient. Again, charges associated with a message may be calculated in any number of ways, including the message duration, or the like. The message is then provided to the recipient in step **S718**.

[0068]   If the recipient declines to accept the charge, message exchange server **10** in step **S724** does not note the message as checked, and thereby effectively leaves the message at server **50**, and returns to step **S704** where it determines if there are any other unchecked messages for the recipient. Optionally, in step **S724**, a message may be formed by message exchange server **10** and sent to the message originator advising the originator that the recipient has chosen not to assume the charges for the message. This message could be provided to the originator as a notification message, stored within the originator's mailbox as a pre-paid message. It will be appreciated that, alternatively, message exchange server **10** may in step **S724** delete the message, or otherwise modify the message.

[0069]   After the recipient finishes checking all the unchecked messages, the recipient may subsequently respond to one or all of the messages. Message exchange server **10** may then execute the steps illustrated in **FIG. 6**, as described above.

[0070]   Conveniently, after a first user establishes contact with a second user,

the first and second users may exchange sequential messages as described with reference to **FIGS. 6** and **7**. Conveniently, the first and second users may apportion costs between each other. The first user, acting as message originator, may initially decide who is to pay for the initial message. The second user, acting as originator may then decide who is to pay for the second message. Who bears the costs associated with the third, and each subsequently exchanged message may be decided by the originator of each message, and may thus be fairly apportioned between the first and second user, or be borne largely or completely by a single user.

[0071]   Steps performed at server **10** to allow a user to access and use server **10** to join a conference/chat room of two or more users, and potentially initiate a one-on-one communication with one of these users exemplary of an embodiment of the present invention are more particularly illustrated in **FIGS. 8-13**. After logging in and upon selecting to enter a conference or chat, as determined in step **S402** (**FIG. 4**), the user is said to metaphorically enter the chat room. Again, a user may register anonymously, and thus join a chat room anonymously. As a consequence of choosing to enter the chat room, server **10** under software control sets flag **229** of record **200** associated with the user to signify that the user is part of the chat in step **S802**. Once in the chat room, the user may now browse the temporary greetings of others currently part of the conference/chat. For the purposes of illustration, a user at telephone **80** (**FIG. 1**) will be referred to a "browsing" user. Steps detailed in **FIGS. 8-13**, however, are independently performed for each user.

[0072]   Effectively, as will become apparent, users in the chat may communicate with each other by exchanging messages that are received almost immediately, thereby allowing near-real time communication of users.

[0073]   Thus, in step **S804** server **10** may provide the browsing user with a "Welcome" prompt providing the browsing user with a brief description of the chat room. To effect this, appropriate voice response segments stored in memory

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140 may be converted into speech signals and sent to the user at telephone **80** via PSTN **70**.

[0074] As well, in step **S804** unit **60** provides the example browsing user a voice sequence that prompts the user to record a temporary personal greeting. The temporary greeting uttered by the user at telephone **80** may be converted to a suitable format and stored in field **226** of record **200**, associated with that user in step **S806**. Prior to storage, the greeting may be screened by an operator of server **10** to ensure that its content is appropriate and not offensive. If inappropriate, the greeting may be rejected and steps **S804-S806** may be repeated.

[0075] In step **S808** server **10** prompts the browsing user to indicate whether he/she wishes to pay for the chat room service or whether the user wishes to use the service for free. The browsing user makes a selection by pressing the appropriate DTMF keys on touchpad **82** of telephone **80**. Thus, a user who paid for the service during one session may use the chat room service for free during a subsequent session.

[0076] If a user decides not to pay for the chat room service, as determined in step **S808**, server **50** modifies the paid/not-paid field **228** of record **200** in step **S816** associated with the user to indicate that the user has elected to use the service for free. Server **50** then proceeds to perform steps **S900** illustrated in **FIG. 9**. As will become apparent, as the browsing user is not willing to pay for the service, his access to the service and other users is limited or restricted.

[0077] If, however, server **50** determines in step **S808** that the user has chosen to pay for the service, server **50** proceeds to determine if any funds are associated with the browsing user in step **S810**. If not, server **10** prompts the user to replenish funds attributed to the user in step **S812**, as for example described in relation to steps **S606-S608**, detailed in **FIG 6**. Next, in step **S814** flag **228** is set indicating that the user is paying. Thereafter steps **S900** (**FIG. 9**) are performed.

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[0078] If and once the flag in field **228** is set, the browsing user's account balance is periodically decremented, so that a paying user effectively pays for time spent in the chat room. Steps **S1302** illustrated in **FIG. 13** are performed by server **10** periodically at a defined interval, to debit the accounts of all users currently in the chat room for whom an associated pay flag is set. Step **S1302** may, for example, be performed as a result of a periodically occurring interrupt, invoking the execution of step **S1302** by server **10**.

[0079] Once steps **S800** have been performed the browsing user is prompted by server **10** to provide a gender selection, indicating whether the browsing user would like to browse the personal greeting of males or females in step **S902** (**FIG. 9**).

[0080] Optionally, at this point server **50** may provide an audible message to the browsing user indicating the total number of other users currently in the chat room, matching the user's search criteria. This may be effected by querying database **54** for the number of records matching the browsing user's gender selection that are currently in the chat room and that have paid and not-paid for use of the chat room service. As will become apparent, users who pay for the service are provided access to all users matching the user's gender preference, that are currently in the chat room. Users who do not pay for the service are restricted in the use of the service and are only entitled to access to those that pay, and are prevented from making contact with users that do not pay. Thus, by knowing the number of paying and non-paying users matching the browsing user's preference, the browsing user may be persuaded to re-enter the chat room as a paying user.

[0081] In any event, next, in steps **S906** or **S908**, server **10** retrieves temporary greetings of others currently in the chat room (by examining field **229** for other users) from field **226** associated with other users, matching the browsing user's gender preference and corresponding to the browsing user's payment option as determined in step **S904**. If, the browsing user has paid for

the current chat room and is therefore entitled to browse all temporary greetings of users in the chat room, server **10** next checks in step **S918** whether the browsing user has credit left in the user's corresponding account record. Specifically, server **50** checks if the balance stored in field **290** of the record **280** associated with the browsing user is larger than zero (**0**). If not, server **10** may request additional funds in step **S920**, in a manner identical to steps **S606-S608** (**FIG. 6**). Once there is credit in the browsing user's account balance, server **10** proceeds to step **S908** to retrieve temporary greeting from field **208** of the next or previous user matching the browsing user's preference. This greeting may be presented to the browsing user in step **S912**.

[0082]   Optionally, server **50** may first verify (not specifically illustrated in **FIG. 9**) that at least one user meeting the search and access criteria of the browsing user is currently in the chat room. If not, server **10** may play an appropriate message and return to step **S402**.

[0083]   However, prior to presenting any retrieved temporary greeting, server **10** determines in step **S910** if any messages from other users have been sent to the browsing user. That is, as multiple users are concurrently on-line in the "chat room" they may send messages to each other and ultimately establish a live one-on-one connection.

[0084]   Messages to be exchanged during a chat session may be stored in a directory structure (not specifically illustrated) similar to directory structure **230**, or in a suitable data structure, stored within directory structure **54** (**FIG. 1**). Each message within the data/directory structure includes an identifier of the message originator and recipient. In step **S910**, this data/directory structure may be queried for messages destined for the browsing the user.

[0085]   Specifically, if a message is waiting, steps **S1200** in **FIG. 12** are performed. That is, in step **S1202** the browsing user is advised of the pending message, and given the option to listen to the pending message. If the browsing user does not wish to listen, as determined in step **S1204**, a "decline message"

may be sent to the message originator in step **S1206**. Thereafter, step **S914** and onward are performed, allowing the browsing user to continue browsing messages. If the browsing user wishes to listen to the message, as determined in step **S1204**, the message is played in step **S1208**. At the conclusion of the played message, the browsing user is given the options of accepting or declining any chat invitation associated with the message in step **S1210**. A well, the user is given the option of replaying the message originator's temporary greeting in step **S1210**. If the browsing user declines any chat invitation, a suitable message may be generated and provided to the requesting user, and steps **S914** and onward are performed. If the user wishes to listen to the originator's greeting it is replayed in step **S1212** and step **S1210** is repeated. In the event the browsing user wishes to establish a live one-on-one connection with the message originator, calls associated with the browsing user and the message originator are bridged in step **S1216**. In step **S1214** flag **227** of the browsing user is set, indicating that the browsing user is engaged in a live one-on-one conversation. Thereafter step **S1100** detailed in **FIG. 11** are performed to monitor the bridged call.

[0086]   If no messages for the browsing user are waiting, and the temporary greeting of a potential recipient user is either played for the browsing user, or skipped, server **10** will provide a menu of the possible follow-up actions available to the browsing user in step **S914**. Preferably, the options include exiting; accessing the next personal greeting record matching the user's search/access criteria; accessing the previous greeting record; sending a message to a user, including a possible request to initiate a one-on-one chat; and exiting to the main menu.

[0087]   If the browsing user chooses to exit to the main menu, server **10** under software control sets flag **228** and **229** in step **S922** signifying the user is no longer in the chat room and not paying and proceeds to execute steps **S400** and onward illustrated in **FIG. 4**. Conveniently, any message for the browsing user within the directory/data structure used to exchange chat messages may deleted

upon exiting. If the browsing user decides to advance to the next or previous message, steps **S904** and onward are repeated for the next or previous message, respectively.

[0088] If the browsing user wishes to request a live one-on-one connection with the recipient user associated with the replayed temporary greeting, server **10** proceeds to record a message in step **S916**. A recorded message including originator and recipient identifiers may be stored in the above described data structure used for the exchange of chat room messages. Thereafter steps **S1000** illustrated in **FIG. 10** are performed to await the recipient user's response to the invitation.

[0089] As illustrated in **FIG. 10**, in step **S1002** server **10** first assesses whether the recipient user is still in the chat room by checking field **229** of record **200** of the recipient user. If not, steps **S914** and onward are again repeated. If, so server **10** assess whether a response has been received within a suitable "time out" period in step **S1004**. If none is received within the time-out period, a prompt indicating "No response" may be played in step **S1006** and steps **S914** and onward are repeated. If the request for a chat is declined, as determined in step **S1008**, an appropriate prompt may be provided to the browsing user and steps **S914** and onward are repeated. If the chat request is accepted as determined in step **S1012**, the PSTN connection between the browsing user and server **10** and the PSTN connection between the recipient user and server **10** is bridged in step **S1016**. This may be accomplished by bridging the PSTN lines at server **10** using the VRUs associated with these lines in a manner understood by those of ordinary skill. The two users may then speak to each other in real time. Conveniently, neither user needs to reveal his/her identity. Before bridging, flag **227** of the browsing user is set in step **S1014**.

[0090] Server **10**, executing similar steps for the recipient user, on the other hand executes steps **S1200** for the recipient user in response to the browsing user dispatching a message for the recipient user, presenting the recipient user

with the message. Again, a response is solicited in steps **S1204-S1216**.

[0091] Once the live chat connection between the two users is established, the browsing and recipient user can converse freely for as long as they wish. As long as the two users are chatting, server **10** continues to monitor whether the both users are still connected, and that the paying user or users have sufficient funds. Steps **S1100** are thus performed, for both the browsing and recipient users.

[0092] In steps **S1102-S1104** server **10** periodically examines whether the other user is still connected by examining field **227** of record **200** associated with the other user. If server **10** determines that the other user is no longer participating in the live connection, server **10** in step **S1112** sends to the remaining user the voice sequence "Connection broken". Thereafter, server **10** returns to step **S914** and prompts the remaining user for the next action it wishes to take.

[0093] While the connection is intact, server **10** assesses if paying users have sufficient funds in steps **S1106-1110**. This is accomplished by server **10** checking a paying (as determined in step **S1106**) user's account balance in step **S1108**. If funds in the account become depleted, more funds are requested in step **S1110**.

[0094] Either user may terminate the live chat connection at any time by pressing a suitable DTMF key, for example, the '#' key. This tone may be monitored in steps **S1100** (not specifically illustrated), and the connection can be broken. As a consequence, server **10** may allows the user to resume his/her previous activity by repeating steps **S914**, and onward. Additionally, field **227** associated with the user may be set to indicate the user is no longer engaged in a live connection in step **S1114**.

[0095] As should now be apparent, if the example user uses the chat room service free of charge, he/she can only send personal messages and request live connections only to those users who are currently paying for the chat room

service. Similarly, the example user, under these circumstances, may only receive personal messages from users who are paying for the chat room service. In this way, multiple users cannot use server **10** to receive chat services for free. If the example user chooses to pay for the service, the example user may send and receive personal messages from all the users in the chat room. As well, the example user may try to establish a live connection with all other users in the chat room.

[0096]   As will also be appreciated, while the organization of hardware and software components, databases and directory structure have been illustrated as clearly delineated, a person skilled in the art will appreciate that this delineation and organization is somewhat arbitrary. Numerous other arrangements of hardware, software and data are possible. For example, database server **50** and IVR unit **60** could be combined into a single unit whereby that unit would have similar components as those described in relation to server **50** and IVR unit **60**. Similarly, databases **52** and **56** could be organized in numerous ways, using relational or object oriented structures. Similarly, data stored in such databases could be stored in numerous equivalent ways. Similarly, directory structure **54** could be replaced by any number of equivalent data organizations, including, for example, one or more databases. Furthermore, the server as illustrated may also be interconnected to a packet switched data network, such as the public Internet, thereby allowing users to also access the server using interconnected computing devices.

[0097]   Similarly, as will be appreciated, the described method of allowing some non-paying users restricted access and use of a chat room serve is not limited to use in dating service systems, but in fact can be used in any system that utilizes a chat room server.

[0098]   It will be further understood that the invention is not limited to the embodiments described herein which are merely illustrative of a preferred embodiment of carrying out the invention, and which is susceptible to

modification of form, arrangement of parts, steps, details and order of operation. The invention, rather, is intended to encompass all such modification within its scope, as defined by the claims.